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JOURNAL of the NATIONAL ASSOCIATION of CHIROPODISTS

AND PEDIC ITEMS

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MARCH, 1921

FEET POTENTIAL SEAT OF FATIGUE

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The condition by this article relates to a somewhat neglected subject "Foot Fatigue," and the need of conserving energy as a means of increasing "foot efficiency," with particular reference to the industries.

The condition termed "fatigue" being largely synonymous with poor work, poor execution of detail work, inefficiency, misdirection, mismanagement, mistakes, failure *summa summarum* decrease of wage earning capacity.

The foot, is must be admitted, has always been known as a potential seat of fatigue, but unlike every other part of the human body, its scientific care has been indefinitely "side tracked."

PERCENTAGE OF FOOT AILMENTS ALARMING

It may be of interest to know that statistics of medical examining boards, serving on Regular and Selective Service Recruiting stations, have disclosed that there were about 45% rejections because of defective feet, the majority of which had to be assigned to development battalions.

The Department of Safety's report of one of the largest cities in the east stated that about 60% of the uniformed force doing patrol duty, have contracted foot defects during a service period of from twelve to fifteen years, while the annual report on educational hygiene of a certain body of students indicated that of 395 students examined 95 had acquired pes planus, 98 cases were ankle valgus and 9 had both of these conditions.

A foot inspection of a certain U. S. National Guard organization by the writer revealed 381 foot cases among an enlisted personnel of 932 men, and resulted in an official communication from the Chief of Infantry, Major General C. S. Farnsworth, War Department, stating that recommendations would be made for the employment of podiatrists in the army.

The increase in foot defects is also demonstrated in the increase in the manufacture of so-called "orthopedic" and "anatomic" shoes and in the large scale of the "commercial arch brace" purporting to serve as a cure-all for painful pedal extremities.

FOOT SANITATION AN IMPORTANT FACTOR

This rather startling status of foot conditions shows that supervision of the human foot cannot be underestimated as a means of sustaining a high standard of industrial efficiency and as a medium of minimizing the number of discharges from employment resulting from said ailments.

When the workingman, whether he wears the proverbial "overalls" or the "white color," accepts employment at the shop, yard, factory, mill

store or office, he is expected to render services commensurate with the amount of pay received. But if he contracts certain physical ailments, such as "foot defects" or has contracted same previously to entering the employ, and if said ailments interfere with the efficient discharge of his duties and render him incapable of continuing his services to the satisfaction of his employer, he will be reduced in pay or perhaps face the inevitable, discharge.

It is evident, *per se*, that employees are required to be in good health, which also includes "sound feet" in order to stand hardships, and to attend to their daily routine of duties they are expected to perform by reason of their employment agreement or contract.

But if their FEET HURT?

The indoor employee is generally confronted with hard wood and cement floors ,while the worker in the field is exposed to climatic changes. In the summer months the pedal extremities swell, while during the rainy season or winter heavy rubber boots are surely not factors beneficial to the already abused agents of locomotion.

The horse is sent to the blacksmith at certain intervals, and the veterinary surgeon is called in whenever symptoms of lameness are evident. But what about the human foot? Our feet are shamefully neglected in spite of all of our so-called "safety-first" propaganda and rules on prophylaxis in its "57 varieties."

Dental surgery fifty years ago was unknown; the teeth were neglected then in the same way, permitted to decay, thereby becoming the seat of focal infection, as the pedal extremities, the *locus* of foot fatigue, are being abused and maltreated today, in the 20th century, one of enlightment and scientific progress.

Science's dawning, history tells us, has always been tardy, but its progress certain and slow. The "barber of yesterday" is the surgeon of "today" the tonsorial artist" of 1849 is the "dentist of 1919," while the "corn doctor" of a decade ago is the podiatrist of 1920.

MILITARY FOOT SANITATION

Today it is no longer necessary to prove by argument or word of mouth the importance of foot care as an eminently large factor to keep an army in a high standard of efficiency and to release its fighting capacity.

Data collected at the various camps have shown that foot defects are omni-present due to various causes to be set forth elsewhere. Paradoxically the World War has done much to arouse the people at large to the need of scientific foot care. Statistics being so complete with information re this matter, an extensive *resume* of these findings in further support of these statements would be a "rehash."

The human foot is a mechanical structure, carrying the entire body, yet if these bones forming the foot are out of adjustment or not in proper relation to another, we are confronted with the same condition as the architect with the house with the faulty foundation. Nature intended us to keep our feet in a position of "adduction and inversion"—toeing in—but whereas mankind insists on toeing OUT and wearing shoes which rob the foot of its proper functions, then takes place a functional and

anatomical upsetting, a gradual pronation of the various arches, resulting in what is termed weak foot, pes planus and cavus, also foot neuralgias of various degrees.

Nature has provided us with arches acting as "springs" to break the jar in walking, but instead of using them as nature wanted us to, we have blindly followed fashion and "toed out" and walked on the *inner* border of the foot contrary to the mechanical principles of foot motion.

In years gone by the shoemaker MADE shoes to FIT the FOOT, and shoe stores and stock shoes were unknown, consequently foot defects were in the minority. At present conditions are exactly reversed.

The average "stock" shoe, whether it is purchased on fashionable Fifth Avenue of the great Metropolis or in the little town of Mad Dog Gulch, Arizona, requires a certain amount of "breaking in" and this process of "breaking in" is very frequently predisposing to painful corns, callosities, excrescences, venous and arterio congestion, edematous conditions *in toto* it prevents the foot from proper functioning.

It is a deplorable fact that mankind has raised a race of "foot-weaklings" because of fashion, style, neglect and ignorance of the subject of foot care.

Today nature is unable to cope with these foot ills, as time and mode of living have greatly changed. Foot Fatigue, as stated in a preceding chapter is synonymous with weariness, exertion, poor work, poor execution of detail work, absence from work, poor pay and loss of employment.

ETIOLOGY OF FOOT AILMENTS

The causes of foot defects may be grouped briefly as follows: (a) Dermatological; (b) Static; (c) Infectious; (d) Traumatic.

Improper foot gear, excessive use of muscles, lack of muscular development, improper posture and ignorance of the subject matter of foot care, are the principle factors bearing on the above, while foot cases of focal origin form a large percentage, especially after epidemics.

New York takes initial step in organizing a Foot Clinic, a Foot Department in several orthopedic hospitals and in appointing a podiatrist to Police Force.

Podiatry has opened a new field of great service to the community, its manifold requirements and grave responsibility incurred should not be underestimated.

When pre-war standards of foot hygiene will prevail in the industries then Foot Fatigue will be reduced to a minimum or a negligible quantity, and industrial foot efficiency will be tantamount to industrial increase in productions, which is equivalent to better work and working conditions, thereby increasing materially the employee's wage earning capacity.

Foot care is still in its very infancy. In order to propel this subject matter effectively into the front ranks, there will be necessary a campaign of educational propaganda along dignified lines with the undivided support of the medical profession, educators, instructors in physical culture, heads of educational institutions, employers and all those individuals who are willing to spread the gospel of new discoveries in a public spirited manner.

A CASE OF EPIDERMOPHYTON INGUINALE, ECZEMETOID RINGWORM OF THE EXTREMITIES

IGNACE J. REIS, D.S.C.

CHICAGO, ILL.

From year to year, as chiropody advances, there arises the desire within one more and more to communicate to all our colleagues any outstanding cases of foot trouble we may run across; or even pick out from the routine practice any one case that may present just some peculiarily interesting phase in its development. Therefore, it is with a good deal of pleasure that I call the attention of the readers of THE JOURNAL to the following history:

Some time ago there was occasion to see a patient who complained of severe pain between the great and second toes of the right foot. Examination showed the skin to be exfoliating with a marked inflammatory reaction extending on the plantar surface for a distance of about 2 cm.

The area was well covered with dermatol making an exact diagnosis difficult at this time. I took it to be a case of dysidrosis and accordingly made daily applications of tinct. benzoin. comp. Relief was immediate there being no more pain and no more excessive secretion.

During the next two weeks, however, there was a gradual return of the symptoms and, believing the diagnosis to be incorrect, all further medication was stopped in order to observe the active spreading lesion. Within a week there was a white sodden mass of epithelium between the two toes with a well defined margin both on the dorsal and plantar surfaces. There was, moreover, to be seen for the first time a slight vesiculation at the dorsal margin and along the great toe margin of the inflamed area. These vesicles showed it to be a case of epidermophyton inguinale, as was proven microscopically, using the method advised by Saboraud.

Saboraud removes the roof of the vesicle, inverts it, places it on a thick glass slide, adds a few gtts of 10% caustice potash and after a few minutes puts on a cover glass and examines it microscopically when the fungus is easily found.

Ormsby in his chapter on the subject gives Whitfield's classification of this disease dividing it into three types:

1 The acute vesico-postular—characterizd by sudden onset and symptoms of acute eczema or dysidrosis.

2 The chronic intertriginous—characterized by epithelial mass vesiculation plus a sharp margin at the dorsal edge of the entire phalangeal skin. On the plantar surface it spreads as far as the metatarsal head.

3 The hyperkeratotic—attacks the whole sole and occasionally the palm and consists of irregular masses of the overgrown horny layers with occasional small postule. This third type, however, is rarely seen by the chiropdoist, he dealing most frequently with the second type.

For this disease Whitfield's ointment is most frequently used:

℞—Salicylic acid ---------- 1.
Benzoic acid ---------- 2.
Petrolatum q. s.---------- 30.

This is to be rubbed thoroughly once every 24 hours and not to be washed off until just before the next application.

The proportions can be increased to 2—4 and 30, if desired, but this is rather strong and causes some burning.

Ormsby also recommends:

R—Chrysarobin	5.
Traumaticin	95.

Saboraud believes that the majority of cases of intertrigo are in reality epidermophyton inguinale and it, therefore, will behoove the chiropodist to be ever on the lookout.

The vesicle formation can always be found at the active margin of the lesion and are generally sufficient to make the diagnosis without the microscopic confirmation.

A therapeutic diagnosis can always be made because Whitfield's ointment, as given above is practically specific.

PHYSICAL DIAGNOSIS FOR THE CHIROPODIST

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At first sight of the above title it may be thought that the study of physical diagnosis is not warranted or has place in the curriculum of a college of chiropody, but can only be made use of by a doctor of medicine. That such is far from a fact, can easily be judged on the following grounds:

There are no doubt many physicians who are not aware that this important subject is now a compulsory requirement for the student of dentistry. One has only to do with the oral cavity, the other the pedal extremities, but both are a very important part of our human anatomy.

The dentist of years ago was simply a tooth puller, and filler, he knew practically nothing of asepsis, bacteriology, histology, pathology or surgery. At the present, however, all is changed and there is practically no subject in medicine that the dentist does not have to have a fair knowledge of, to obtain a degree of D. D. S.

The same with the student of chiropody.

The day of correspondence courses, or self-teaching, as far as medicine is concerned, is coming to a close, and the old law of the "survival of the fittest" and of what is right and legitimate, is ever staring the attempt to form new creeds in the face.

It would no doubt surprise many, in and out of the profession, to know how many subjects are taught, and to what extent the student must delve into these matters to date at the California College of Chiropody. It did really surprise the writer. It can be said that practically the same subjects are taught as are in the studies of the dental student's first two years. This is as it should be, and the study of physical diagnosis takes its place among them.

Strictly speaking, physical diagnosis means the making, or at least the attempt at making, a diagnosis by physical means; that is by using instruments, but a much wider interpretation than this can be made.

In the case of the chiropodist, while it is true that he is only vitally interested in one localized part of the patient's anatomy, he must be made to understand that no part of the human system works absolutely inde-

pendently of the balance ,and it is necessary that all parts work normally and harmoniously to create a condition called health.

This fact at once breaks down the barrier between the physician and the chiropodist, and allows him to, yes, even invites him to look over the medical fence and see what is going on on the other side, and what confronts him below is perhaps not due to imperfections or pathology alone.

I am sure no one will say he should not look elsewhere for the trouble but rather how is he to identify and know trouble, or pathology exists outside of his particular line.

Let the M. D. stop and consider for a moment and realize how much of his diagnosis was made by trained observation of his patient, perhaps unconscious to himself, how much he obtained, by asking questions and interpreting answers, how much by previous history, how much by palpitation. It is true that neither the dentist nor the chiropodist becomes, or need become, proficient in the use of the stethoscope, sphygmomanometer or opthalmoscope, but he should at least know that there are such instruments, what they are used for, and what their findings mean, when taken by someone proficient in their use, so that in case of consultation or reference he will be an active aid and not an onlooker. Should not a chiropodist be able to take a temperature or pulse and interpret their meanings?

Who would have thought some years ago that the dentist would have to know anything about the X-ray—such was for broken bones only, not broken teeth. Yet how important it is for him now. The same applies to the study of chiropody when bony faults and changes must be taken into consideration to obtain proper results. And laboratory work, such as urinalysis, etc.; how important it is to know that certain constitutional diseases, as diabetes, syphilis, tuberculosis, etc., are often the cause of foot troubles. Should he not therefore, have some diagnostic knowledge as to their possibility of being present? Should he not know that he cannot expect the same results or offer the same prognosis, in cardiac decompensation, or pipe stem radicals, as he could if such pathology were not present?

It is not possible to teach the student of chiropody in a two year course, the cardinal symptoms of such pathology? Would not palpitation of the radicals, and a history of dyspnea be practically all that would be necessary to let him know that the balance of the human machinery is not working smoothly and such being the fact, he cannot expect first class end results in his line.

Is it, therefore, not obvious that by calling attention by the instructor to the objective symptoms, of the most important and common pathology, that the chiropodist is going to do better work and not have his opinion and diagnosis always only founded by what he finds in the feet?

As a matter of fact, few physicians care to get down on their knees, thereby lowering their dignity, to look at a patient's foot. Therefore, to my mind, good chiropody is going to have a place in the Medical Sciences and will help to keep out some of the less scientific pseudo doctors at present straightening out links in peoples pocket books, thinking they are doing right, because their education has been too limited, and believing that everything that does not measure up to the standard of anatomy must be abnormal and needs twisting.

THE USE OF ELECTRICITY IN PODIATRY

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THE GALVANIC CURRENT (Continued)

The ions used in medicine may be arranged in two tables, according to the electrical charge which they bear.

Electro-positive elements carry a positive electrical charge and are applied under the positive pole, in order that they may be repelled *from* the (+) pole into the tissues. (like poles repell and unlike poles attract). Electro-positive elements are also known as *kations*, this name being given them because they *move toward the opposite pole* or kathode (cathode).

KATIONS

Zinc—Best obtained from a 1% solution of zinc sulphate.
Magnesium.—Best obtained from a 1% solution of magnesium sulphate.
Lithium.—Best obtanied from a 1% solution of lithium chloride or carbonate (the latter is only slightly soluble).
Silver—Best obtained from a 15% solution of silver nitrate (distilled water should be used).
Copper—Best obtained from a 1% solution of copper sulphate.
Mercury—Best obtained from a 1% solution of mercuric chloride.
Quinine.—Best obtained from a 1% solution of quinine hydrochloride.
Cocaine.—Best obtained from a 1% soluton of cocaine hydrochloride.
Novocaine.—1% solution with adrenalin.
Adrenalin.—From a solution adrenalin chloride (1 in 1000).
Accnite.—Best obtained from a green plant tincture of aconite or a 1% solution of its alkaloid—aconite.
Ichthyol.—From a 1% aqueous solution.
Menthol—From a 1% alcoholic solution.
Thymol.—From 1% alcoholic solution.
Thuja.—From green plant tincture of thuja.

(Note.—All alkaloids are electro-positive and should be applied under the positive pole.

ANIONS

Chlorine.—Best obtained from a solution of common salt (sodium chloride) made as necessary by adding three teaspoonfuls to a pint of water.

Iodine.—Best obtained from a 1% solution of potassium or lithium iodide.

Salicylic ions.—Best obtained from a 15% solution of sodium salicylate.

Anions are electro-negative elements, carry a negative (—) charge and are applied under the negative pole, in order that they may be repelled *from* the negative pole into the tissues. They are called anions because they *move toward the anode*.

The solutions need not be more than 1% in strength. It must not be thought that more ions will be introduced if the solution is stronger. The stronger the solution the larger the proportion of indissociated molecules. Stock solutions of 10% strength may be made and diluted with ten times the bulk of water when required for use. Hydrant water may be used if it is not "hard." If it is hard, and contains much carbonate or bicarbonate, precipitates will be formed if it is used to dilute zinc salts. In this case distilled water should be used.

In some cases the substance to be introduced need not be already in the ionic state before the current is passed. For example, if the zinc ion is to be introduced, we may use the metal itself instead of a solution of one of its salts, and connect it to the positive pole. When the current passes, the metal slowly passes into solution, so that its ions are formed. These ions then migrate into the tissues. It is more convenient to use the metal when parts difficult to reach with the solution— *e. g.* sinuses—have to be treated by the ionic method.

The active electrode (under which the drug is applied) consists of a flexible sheet brass or aluminum plate, which can be moulded to fit the contour of the part ,and several layers of felt, gauze or lint which is wet with the solution.

The gauze should be folded until it presents at least 12 or 15 thicknesses of the fabric and a cut a little larger than the metal plate so that the edge of the metal cannot come in contact with the skin. The wet gauze is placed smoothly over the diseased area, the metal plate laid upon it, bound snugly in place with a few turns of bandage and connected to the battery wire by a spring clip.

By using 12 or 15 thicknesses of gauze it will be seen that the metal is situated some distance off the skin. The importance of this will be evident when it is recollected that, as previously mentioned, new ions having caustic properties are formed at the points where the metal and the fluid conductors are in contact. At the metal plate that forms the cathode, sodium and OH ions are formed. The latter are repelled from the cathode toward the skin. If the gauze pad is thin, they will finally reach the skin, and, being caustic, may cause burns. In the case of the anode being used as the active pole, ions of the metal out of which the plate is made, will migrate toward the skin. If the pad is thin they will soon reach it. In some cases it is intended that the metal ions shall be introduced, but not necessarily those of the metal forming the electrode (copper and zinc, when the electrode is made of brass). In other cases, ions other than those of metals (quinine for example) are to be introduced, and in these cases the metallic ions are not desired. So that a pad of the described thickness is sufficient to hold enough solution, and at the same time the metallic ions will not have time to reach the skin.

The size of the active electrode depends upon the surface to be treated and the extent of the disease. In podiatry, electrodes of from one to two inches in diameter should be used upon the dorsal and plantar surfaces of the foot, as, for example, in the treatment of neuritis; while electrodes three or four inches in diameter would be necessary in treating disease of the ankle joint.

In treating small areas upon the toes, as, for instance, ulcerated corns with sinuses, or in bursitis of the great toe joint, a special electrode is necessary, having a bowl-shaped disc and an insulated handle. The part is covered with the gauze pad, wet with the desired medicament, and the metallic disc placed upon it and held firmly in place by the operator during the course of the treatment.

In all cases the indifferent electrode should be several times the size of the active electrode, covered with sponge or felt and placed upon the opposite side of the part or held in the hand of the patient. Where the diseased area is upon the dorsum of the foot a convenient arrangement

consists in placing the patient's foot or heel upon a felt covered foot-plate wet with saline solution.

If the part to be treated lies under the skin, the latter should be freed from greasy secretion by washing with alcohol, ether or soap and water. Any skin lesion should be covered with a scrap of waterproof material, as sheet rubber or adhesive plaster.

In applying the current it must always be started from zero, slowly and gradually until the maximum is reached, at which it may remain for the period of the treatment, depending upon the sensibility of the patient. It is frequently necessary to reduce the current a little as the treatment progresses. The current should be switched off gradually. The too rapid increase in the current, or the too rapid diminution, will cause pain without shock.

After a small amount of current has been switched on the patient feels a prickling, tingling sensation. It soon disappears, to be followed by a hot, burning sensation over the whole pad. This again diminishes, unless the current is increased from this point.

The amount of current to be used depends upon the sensibility of the patient. In podiatry as much current should be used as the patient is able to bear without actual discomfort. The larger the electrode used the greater the amount of current required. As a rule not more than twelve to eighteen milliamperes should be used to each square inch of electrode.

If the ions have to be introduced into a tissue from which the epithelium or superficial fascia has been lost, such as a wound or ulcer, any scabs or crusts should be removed and the surface cleansed with saline solution. The pad then is evenly applied to the cleansed surface. If the surface is very irregular, the irregular portions should be gently packed with bits of cotton wet with the solution until he surface of the wound has been built up level with its edges, over this the wet gauze pad is applied and upon this the active metallic electrode.

Duration of treatment varies according to the case. If slight, superficial ulcer is to be treated the session need not last longer than from one to three minutes. Neuritis of the plantar nerves will require from one-half to one hour, as the part to be ionised lies some distance below the surface.

The interval between two successive treatments also depends upon the case. When ions like zinc, copper, etc., that have caustic properties are used for treatment of sores and raw surfaces, the treatment should not be repeated until a week or ten days have elapsed. When ions that have no caustic action are used and the part to be treated lies under the skin, the sessions may be more frequently held, even every other day. if the erythema and slight degree of tenderness that follows each treatment have subsided, the treatment may be repeated.

The following conditions are frequently treated by ionic medication:

Arthritis, by the driving in of chlorine ions. Gouty and rheumatoid arthritis by lithium and salicylic ions.
Joint ankylosis, by chlorine ions.
Contractions as the result of scar tissue, by chlorine ions.
Neuralgia and Neuritis, by salicylic or quinine ions.
Ulcers and open sores, by zinc ions.
Sinuses, by zinc ions.
Verruca, by magnesium and zinc ions.
Corns, zinc or salicylic ions.

FARADIC CURRENT

The production of the Faradic or induced current is the result of mechanics. There is no electrolyte, no metal to be decomposed, and no chemical action. A primary current (the source of which is immaterial) is passed through a primary coil. Surrounding this primary coil is a secondary coil. The terminals of the primary coil are connected with the source of the primary current, which may be generated by wet or dry cells or may be taken from the street current of a dynamo.

There is no metallic connection between the primary and secondary coil. In fact, for therapeutic purposes, the secondary coil is freely movable over the primary. The object of this free movability is to be able to affect either the whole or only a part of the secondary winding— in other words, the strength of the induced current can be regulated by pushing in, or pulling out, the primary coil.

When a current of electricity is passed through a wire, lines of force or magnetic flux, are set up, radiating like the spokes of a wheel, at right angles to the winding. When a secondary winding is superimposed upon the primary one, (one spool of wire sliding upon the other) the lines of force or magnetic flux are cut at right angles by the superimposed layers of wire. *This cutting of the lines of force induces a secondary or induced flow of current in the superimposed (secondary) coil.* The terminals of the secondary coil are connected to the patient.

Manifestations of the secondary current occur only at the "make" and the "break" of the primary current. At the moment that the primary current is closed, or made, a changing or an induction takes place; at the moment of the opening or breaking of the primary current a sudden discharge of the previously induced current takes place. The discharging current is always much stronger than the charging one. The reason for this difference in potential (stress or voltage) is due to two factors: First, the induced or secondary current always flows in the opposite direction to the inducing or primary current; and when two currents are in close proximity to each other flow in opposite directions to each other there is a certain amount of loss, due to a neutralizing effect. Second, when the secondary coil is fully saturated, then suddenly discharged, the full voltage of the coil manifests itself in the discharge. The difference in the potential (voltage) of the make and break current is so great that for practical purposes the break current only is utilized.

The mechanism which interrupts, makes and breaks the primary current is known as the vibrator. The vibrator is magnetically operated and may be attuned to any number of frequencies (vibrations).

From the above description we see that the physics of the secondary or induced current is entirely mechanical.

Since the physics of the Faradic current is entirely mechanical, the physiologic effects rest upon a mechanical basis. It is, of course, understood that every mechanical movement or motion of the human body influences the chemistry of the same accordingly. Whatever chemical changes produced in the body, as the result of the application of the Faradic current, are the direct results of the tissue contraction and relaxation, and *not* the primary effects of the current.

The Faradic is an Induced, Alternating, Interrupted current, of

relatively high voltage and low amperage; the potential varying from 1,000 to 50,000 volts, and the volume from one-thousandth to one-milliampere—according to the size and length of the secondary coil and the strength of the current in the primary coil.

GENERAL FARADIZATION

General Faradization is the application of the mode to the body for various general and constitutional conditions. Its effects may be summarized as follows:

1. Acts as a sedative upon the nervous system, allaying nervous irritability and pain. Sleep is facilitated.
2. Temporarily acts as a stimulant.
3. Improves the general nutrition of the body. Muscles develop in size and hardness and body increases in weight.
4. Promotes the process of body waste and repair.

Whenever a general tonic is necessary as in poor circulation, paralysis, rheumatism, etc., the negative pole is placed over the feet and the positive pole over the spine or affected part, or muscle requiring treatment.

If an irritating or stimulating effect is desired, place the positive pole to the feet and the negative pole over the seat of disease. The strength of the current should be regulated by the sensations of the patient—never used to the point of producing pain. The application should be continued from five to fifteen minutes, daily or every other day. As a general rule the vibrations (alternations) should be rapid in nervous cases, while slow interruptions should be used where a mechanical, massaging effect is desired.

LOCAL FARADIZATION

The physiological effect of a Faradic current depends largely upon its voltage and frequency of interruptions. It consists of a series of shocks, caused by the interrupted, or the "make and break" and has the same mechanical effect upon the tissues as a gentle pounding, tapping, rubbing or massaging of the parts, extending even to the deeper tissues. A current of low voltage and slow interruptions acts principally upon the muscles and the motor nerves, producing intermittent or *Clonic* muscuular contractions; while a current of the same voltage, but of higher frequency produces a continuous contraction, known as a state of Tetanus or *Tonic* muscular contaction or spasm.

In cases of acute pain, other than those associated with inflammation or septic infection, as neuralgia, etc., a Faradic current from a high-tension (high-voltage) secondary winding should be used. Such a current is produced when the vibrator emits a singing, musical note (on account of the rapidity of the vibrations.)

The low-tension Faradic with slow interruptions is used therapeutically to promote muscular growth, to relieve stiffness due to rheumatism or following an injury, to promote the absorption of exudates, gouty deposits, etc., and for the production of muscular contractions, as a form of passive exercise in cases of partial paralysis, muscular atrophy, etc. *In testing for nerve degeneration this form of Faradic current should always be used first, and if no response is obtained it is to be followed by the interrupted galvanic.* (See muscle testing in future article).

While it is true that the Faradic current is an alternating one, never-

theless, the alternations are not of equal value. There is a distinct polar difference. The negative or break pole is always several times stronger than the positive or make pole. As a general proposition it may be stated that the positive pole is the sedative or pain relieving pole, while the negative is the irritative or muscle contracting pole. Judged by its actual physiological effects, there is no doubt but that Faradism is the least important of the various currents used in electrotherapeutics. The low tension Faradic is now practically superseded by the interrupted Galvanic and Sinusoidal currents, while the High-Frequency current has almost displaced the high-tension Faradic in the treatment of local pain and inflammation. However, the Faradic current has a valuable, though limited field. (*To be continued*).

Arsonval on the History of High Frequency Currents in Therapeutics.—The well known inventor of the Arsonval current which was termed arsonvalization by Benedikt of Vienna gives in *La Medecine*, June, 1921, a brief outline of the history of our knowledge since the year 1903. He sums up his circuit as an alternating one with millions of cycles a second in place of 80 to 100. The number should be from four to six millions. The author began to study simple alternation in 1881 and the greatest number of alternations then available was 10,000. This frequency was found to be innocuous. Improvements in technique gradually led to increase of frequency and in 1893 he was able to pass through his body a current of 900 volts times 0.8 amperes, equivalent to 720 watts, without any sensations. Naturally the same amount of electric energy in a galvanic circuit would have been fatal. He showed at the same time that often in apparent death from industrial alternating currents of low frequency reanimation is possible by means of artificial respiration. Although diathermy is claimed by Germans and Austrians as comparatively new, the author shows that he discovered the principal phenomena in the last century . In 1893 he passed 3,000 milliamperes through his arm with the genesis of heat and in 1896 he first used diathermy in the clinic and showed that it could slow metabolism. The experiments attracted no attention because at that time there was no electric installation in the hospitals. The term arsonvalization could with equal propriety be applied to the diathermic circuit.—J. A. M. A.

OBITUARY

MARGARET E. STRYKER

Succumbing to burns resulting from an accident, Margaret E. Stryker, of Pontiac, Michigan, died on February 12th. 1921, in her fifty-seventh year. Dr. Stryker was born in Ontario and came to Pontiac in 1907 since which time she has practised chiropody continuously in that city. She was one of the most energetic members of the Michigan Chiropody Association and has been a staunch and loyal supporter of the National Association for many years. Last year at Philadelphia she represented her state society as its member of the House of Delegates. Her deeds of kindness mingled with mirth will always remain as a pleasant memory with those who knew her. She is survived by a son, Louis, of Detroit, and two brothers, of Buffalo, New York.

FROM VANCOUVER TO PORTLAND

The Second Lap of Our Trip to The Convention.

Leaving Vancouver for Victoria at 10:30 A.M. August 2, en route to Seattle, a palatial "Princess" steamship of the Canadian Pacific Railway will steam for four and one-half hours through the picturesque Gulf of Georgia which separates Vancouver Island — "The Island of a Thousand Miles of Wonderland"—from the mainland of British Columbia. Bidding farewell to the towering "Lions" which guard Vancouver and which the Indians called "The Sisters," the traveler sees Dame Nature stage one of her grandest moving pictures as the ship passes beautiful bays, rocky, wooded headlands, distant snow-capped mountain peaks and vast stretches of the Gulf.

At 3 P.M. the "Princess" steams into the harbor of Victoria, capital of British Columbia, coming to anchor but a short distance from the imposing parliament buildings and the beautiful Empress Hotel.

The City of Victoria, situated at the southernmost point of "The Island of a Thousand Miles of Wonderland," an island of enchantment, named after Captain George Vancouver, of the British Navy who discovered it in 1792, is reached by a delightful water trip of a few hours from the City of Seattle, or from the British Columbia mainland rail terminal at Vancouver. Nowhere are water landscapes quite equal to those to be viewed on Puget Sound and the Straits of Juan de Fuca, between Seattle and Victoria, or on the waters of the Gulf of Georgia between Vancouver and Victoria. The excellence of the service of the steamships connecting the State of Washington and British Columbia mainland with the Port of Victoria insures an added joy to the delightful trip.

There is an enticing welcome to the traveler entering the beautifully picturesque harbor of Victoria with its setting of the blue-tinted Sooke Hills, of Little Saanich Mountain, upon which is seen in flashing whiteness the Dominion Government Observatory, housing one of the two largest telescopes of the world, and with a foreground of beautiful trees, shrubs, flower-gardens and majestic buildings. The nearby Olympic range of mountains lends its majestic snowcapped grandeur to a scene that Rudyard Kipling, the eminent poet and writer, compares to a combination of world-famous beauty spots in the following languages: "To realize Victoria you must take all that the eye admires most in Bournemouth, Torquay, the Isle of Wight, the Happy Valley at Hong Kong, the Doon, Sorrento, and Camps Bay; add reminiscence of the Thousand Islands, and arrange the whole round Bay of Naples with some Himalayas for the background."

Victoria is noted for its magnificent drives, the beauties of which cannot be appreciated by a hurried survey.

THE "PRINCESS CHARLOTTE"
Which will carry us from Vancouver to Seattle.

At 4:30 P.M. the "Princess" will steam south toward Seattle. Leaving Victoria's lovely harbor, the Strait of Juan de Fuca is crossed and the ship enters Puget Sound, arriving at the hustling city of Seattle at 9:15 P.M. Seattle is one of the wonder cities of the Pacific Coast. Named after an Indian chief, it has grown to be a city of 315,000 inhabitants in a quarter of a century. It is a city of green hills, picturesque waterways and skyscrapers. It has a flatiron building, 42 stories high, and a real Alaskan totem pole in Pioneer Square.

After a night and a day in Seattle, the slogan will be "All aboard for Portland—'The Rose City'." The train leaves over the Union Pacific at 11:15 P. M. August 3 and rolls into Portland the following morning at 6:45. Portland is a beautiful modern business and home city of 258,000 people, and is the center of the Columbia River region. Through the heart of the city flows Williamette River, and in the distance looms Mt. Hood, most noted of Oregon's snow-tipped peaks. There are trees and flowers everywhere in Portland and the wonderful roses which have given Portland's "Rose Festival" nation renown.

One of the greatest roadways in the world is to be found at Portland, the Columbia River Highway, which stretches for miles in either direction from the city. The time in Portland will allow for a trip on this wonderfully beautiful scenic drive. The highway runs along the majestic Columbia River in comparison to whose grandeurs, those of the Rhine suffer by comparison. Our drive will take us to Crown Point, Canticleer, Latourelle Bridge, Shepperd's Dell, Bridal Veil Falls, Cathedral Rock and St. Peter's Dome, the great fish hatchery at Bonneville, Eagle Creek, etc., etc.

Tacoma will also be visited during our stay in Washington.

While Tacoma, Wash., during the past few years has been attracting wide attention through its growing activities in foreign trade and its development as one of the leading ports on the Pacific Coast, the city has not lost sight of the fact that it possesses the titles of "The City of Hospitality" and "The City With The Mountain in its Dooryard."

Parliament Buildings, Victoria B. C.

These two titles were justly earned, as geographically and climatically, no more wonderful spot could be asked for by the tourist, who seeks the ultimate in out-of-door recreation. Boating, fishing and swimming, in fresh or salt water; golf, mountain climbing, automobiling or skiing, these are all his to command and enjoy amidst some of the greatest scenery in America.

On the waters of Puget Sound, described by world travelers as the "American Mediterranean," the city rises in a huge crescent-shaped terrace back from one of the two harbors in America capable of taking care of ships of any size or tonnage, and faces

the great mountain which attracts thousands of tourists each year.

Within a few miles of this salt water, and virtually within the limits of the city itself, are a number of beautiful fresh water lakes reached by splendid paved highways and offering opportunity for boating, swimming and fishing.

Mount Tacoma, raising its great white peak above the snowcapped lesser peaks of the Cascade range, presents a never-ending delight to the traveler and even the oldest inhabi-

LATOURELLE FALLS
Columbia River Highway, Portland, Ore.

tants declare that on no two days is the mountain the same. It is Mount Tacoma that gave the city the title of the "City With The Mountain in its Dooryard" for it rises 14,408 feet high in Ranier National Park, and the park itself reaches down to within a comparatively few miles of the city.

Auto stages make the trip to the park from Tacoma in a few hours over a wonderful highway that leads through forests of huge fir trees and comes out at unexpected intervals to surprise the tourist with never-to-be-forgotten glimpses of deep valleys of timber backed by mountains and blue sky. Those who do not desire to go the entire distance by automobile may make the major portion of the trip by railroad ending with a short auto stage ride that brings one above the clouds.

Should the mountain trip or the still shorter visit to the lake districts on the outskirts of the city prove too long for one forced to cut short his stay, Tacoma has over 300 miles of paved streets over which one may ride in inspecting the great saw-mills, the shipyards, the Tacoma smelter and other industries, not to mention the residence district of which the city is justly proud.

There are twenty-five parks and playgrounds in the city, with Wright Park, one of the most beautiful, in the heart of the city. Point Defiance Park, always remembered by all visitors lies at one end of the city and can be reached by either automobile or street car. This park, the largest of them all, is on a bluff high above Puget Sound and its point reaches far out into the waters, affording a magnificent view for miles in every direction. Tacoma's harbor, with the Puget Sound shipping and the steamships bound to and from the Pacific Ocean may be seen; Mount Tacoma with its background of the Cascades and the sky rises behind the harbor while to the south is the broad expanse of sound that leads to Olympia and to the north the gateway to the open ocean.

Briefly concerning Tacoma itself: the tourist will find excellent service at the

ST. PETER'S DOME
Columbia River Highway, Portland, Ore.

hotels and a number of high-class theaters offer the latest in motion pictures and the spoken play. Its climate is one of the finest in the world with an average summer temperature of 60 degrees and 41 degrees in winter.

Altogether it is in reality the "City of Hospitality" and headquarters in the Pacific Northwest for the tourist and recreationist, whether the visit be for an hour, a day, or a month.

JOURNAL of the NATIONAL ASSOCIATION of CHIROPODISTS

AND PEDIC ITEMS

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CHANGE OF ADDRESS notice must give both old and new address.

COMMUNICATIONS concerning more than one subject—manuscript, news items, reprints, change of address, payment of subscriptions, information wanted, etc.—correspondents will confer a favor and will secure more prompt attention if they will write on a separate sheet for each subject.

ADVERTISEMENTS—Advertising forms go to press on the 20th of month. To secure insertion, cuts and copy must be in on that date. Rates on application.

MANUSCRIPTS should be typewritten, double-spaced, and the original, not the carbon copy, submitted. Carbon copies of single-spaced manuscripts are not satisfactory.

ANONYMOUS CONTRIBUTIONS, whether for publication, for information, or in the way of criticism, are consigned to the waste basket.

CONSTITUTION AND BY-LAW AMENDMENTS

With the next issue of THE JOURNAL will appear the final printing of the amendments to the Constitution and By-laws before they are sent to the various state societies.

For the most part the changes and additions suggested are mere routine matters suggested by the experiences of administration under the old regulations, but there are several sections which are of sufficient importance to warrant editorial discussion so that a better understanding of them may prevail in the state societies as they discuss them and instruct their respective delegates to the San Francisco convention.

While the delegates of the affiliated societies must have some idea as to what the groups they represent desire, we question the advisability of sending the delegate to the meetings of the House "instructed." The viewpoint as expressed locally may not take into consideration the problems of other sections and for that reason the delegate may go to the House "instructed" on some particular subject only to find when he hears the various other arguments and is able to get a full view of the matter up for discussion from a national rather than a state angle, that he should vote in direct opposition to what his society instructed him. There is a more general tendency to send the state representative to the national meeting "uninstructed" and this has proven and is proving to be the most efficient way of getting results at a convention.

Article 2, Section 1 of the Constitution is suggested to be amended by making it read that any member ceasing to be or refusing to become a member of an affiliated society shall cease to be a member of the N. A. C.

This is as it should be, for a state society must have every member pay an assessment to the N. A. C. It is only fair under this ruling that

the "National," in turn, should insist that each of its members be a member of his respective state society providing that society is affiliated with the N. A. C.

Chapter 1, Sections 1c and 1d of the By-laws sets forth the workings of this ruling as demanded in the section of the Constitution just discussed. This is mere routine law as to how this matter is to be handled by the national and state secretaries.

Article 4, Paragraph 1 of the Constitution, which deals with the membership of the House of Delegates, has two amendments suggested. Both call for a prorating of the votes based on the membership of the society but differ as to the prorating. This is a matter of seeming importance and, in all probability, will bring out a wealth of discussing at San Francisco.

Chapter 3, Section 1 of the By-laws is to be amended to allow the representative of one state to act for another by proxy if in possession of certain credentials and is allowed to do so by a majority vote of the House. This is also an important consideration. This matter of proxy representation has been under advisement for some time with about an equal division as to the practicability of such an arrangement. This will also demand the careful consideration of the members of the House next August.

Chapter 1, Sections 3, 3a, 3b and 3c are also a new departure and call for the issuance of "demits" should a member leave one state to practice in another so that he may be able to affiliate with the society in the latter district. There have been one or two cases of this nature which have already caused no end of confusion, and this amendment if enacted will obviate any future misunderstanding.

Each state society should thoroughly discuss these various changes.

RIDICULOUS LEGISLATION

The bill fostered by some osteopathic society of Boston and recently introduced into the Legislature of Massachusetts died the laughing death is deserved.

That high heels are a menace to the health of the women who wear them, and to the generations which are to succeed there is no doubt, but this question cannot be settled by a mere legislative enactment which makes the wearing of high heels a misdemeanor punishable by an increasingly higher fine for each offence.

The abolition of the extremely high heel is dependent upon a propaganda of instruction which must be commenced in the school class room, where the woman may be reached while she is yet a child.

To pass a law as arbitrary in its rulings as that proposed to the Legislature of Massachusetts, would mean suffering to thousands of women whose leg muscles are permanently adjusted to compensate for this unnatural stilt. Tell a person they can't do a thing, and the chances are they'll do it—even if its a brand new experience for them. The Volstead Act, for instance, has made our driest citizens bubbling founts of moisture.

The Legislature of Massachusetts showed its usual good judgment in throwing out this bill, and, incidently, had a good laugh to liven up the tedium of routine business.

National Association of Chiropodists

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In all, $6,900 was subscribed by these members who came to the aid of the Council in the successful endeavor to finance the purchase of Pedic Items so that it might be, at last, a truly national paper, owned by the Association and controlled by its Council.

The officers extend to these members sincere thanks for their interest. These names will go down in the history of the N. A. C. as having made possible the acquisition of this valuable property.

The notes for these various loans are now being sent out from the President's office and will be received by the subscribers in a short time.

Legislative Committee

The legislative work throughout the country is very active at this particular season of the year. During the winter months, the legislatures of most of the states convene, and we are glad to be able to record that Indiana, Iowa, Oklahoma, Oregon, Delaware and Montana have had chiropody bills introduced into their respective legislatures, and that they are now receiving the consideration of these bodies.

The bill in Indiana was introduced by Representative Otto R. Beyler, of South Bend, and is known as House Bill No. 232. This bill has been referred to the Medical and Public Health Committees for its reading and approval.

The Legislative Committee of the Oregon Society is composed of C. Loven, Chairman, E. W. Taylor and A. A. Maar. A chiropody bill was introduced into the Senate of that State on January 10th, 1921, by Senator Hume, and is known as Senate Bill No. 7.

In Oklahoma, the bill was introduced into the Assembly by Representative Murray F. Gibbons of McClain County, and is known as House Bill No. 120.

The Delaware bill has been presented to the Assembly and was referred to a committee for approval.

The Montana bill is also in the Assembly and will receive action in a very short time.

The Iowa bill is now in the hands of the Attorney-General, who is looking

over it from a legal standpoint, and will shortly receive the consideration of both Houses of the Legislature of that State.

Public Information

The Bureau of Public Information has been at work in conjunction with the Legislative Committee aiding the various state societies in obtaining publicity for their respective measures. Publicity has been obtained in practically every state where a bill has been introduced and the Bureau is also aiding the Texas Society which proposes to introduce a bill very shortly.

This Bureau has also been drawn into the recent agitation regarding the introduction of a bill regulating the height of heels in the Massachusetts State Legislature. Fortunately this bill was killed in the committee and laughed out of evidence when it appeared on the floor of the House.

The New York Society has issued a pamphlet entitled "Brief Facts About Podiatry" and states in terse phraseology what chiropody is, who practices it, what training is necessary for the chiropodist, of what the School consists, its teaching staff, its clinical staff, and a reprint of the definition of chiropody in that State. These pamphlets are having a wide distribution by means of the offices of the members of the state society, and promise to be productive of great results as far as public information is concerned.

Membership Committee

Sumner J. Olson, chairman of the Membership Committee, is still working on the correction of the state lists and many of these are now being returned to him from the respective state secretaries corrected and added to, to bring them up to date.

A letter which has been sent out to the non-members of the state societies in states where the local body is affiliated is for the purpose of getting these people to join their state society before the coming convention. An amendment which was introduced at the Philadelphia Convention and which will be acted upon at the coming meeting, will make it obligatory for a member of the N. A. C. to be a member of their state society in their locality, if the society be affiliated, or else lose their membership in the N. A. C.

The Membership Committee sincerely hopes that these non-state members will see the fairness of asking them to join their state society, and thus aid in the general uplifting movement in their own locality.

A number of the state societies are now making active membership campaigns and these are presenting increased rosters in these various sections of the country. If you are not a member of your state society and do not know to whom to apply for membership, this information can be obtained by writing to Sumner J. Olson, 414 Hippee Building, Des Moines, Iowa.

Scientific Committee

The Scientific Committee reports that the quiz compend leaflets have now been fully distributed and that many of the state societies are very keen for this particular feature of the work.

These quizzes are to be given as a part of the scientific program at each meeting of the state society and its divisions and if this is done, it will aid to brush up the members on the points of anatomy which perhaps they have forgotten.

The scientific committee is now active in preparing the scientific program for the coming convention in San Francisco. This convention is now only five months off which is little enough time for that committee to separate the chaff from the wheat and get together a program which will be in keeping with the high standards of previous conventions. Beginning next month we will be able to give more definite information regarding the individual features of this program, but we are informed by the scientific chairman, Dr. Ramsburg, that he has been able to get the promise of a number of prominent men to talk at San Francisco.

Convention News

The attention of the members is called to an article appearing in this issue of The Journal which describes the trip from Vancouver to San Francisco.

Again we must call your attention to the fact that if you are planning to attend the convention and wish to travel over the route outlined in the February issue of The Journal with the official party, to make your reservation at once either with Dr. Ramsburg or Secretary Graff. At the present writing only about forty reservations have been made and if we are to have a special train, it will be necessary to have 125 reservations before the final plans can be completed.

The attention of the state societies is called to the fact that reservations

should be made for their state delegates, even though at the present time these have not been chosen. A special letter has been sent out to each state society calling attention to this fact and this paragraph is merely a reminder to make this reservation if it has not already been done.

S. R. Levy, 12 Geary Street, San Francisco, Secretary of the Housing Committee of the California Society, writes to notify us that he will be able to obtain hotel reservations for those who do not care to stop at the Palace Hotel, in the neighborhood of headquarters, at rates ranging from $2.00 for a room and bath, upward. The rates at the Palace Hotel are $5.00 for a single room and bath, and $8.00 for a double room and bath. If your hotel reservation has not yet been made, you had best write Dr. Levy, giving your name and requirements at once, so that you will not be forced to sleep in the Presidio. The days in California are exceptionally warm and pleasant, but the night are cold—too cold for sleeping out of doors.

Local Convention Committee

The following are the committees appointed from the membership of the California Society:

General Committee

Dr. C. L. Scharff, chairman; Drs. Morris, Gottstein, DeMessant, Watts, Oakland; Drs. Cranstoun, Hazelhurst, Hampshire, Scherer, Los Angeles; Drs. S. Rutherford Levy, Crutchett, O. L. Gruggel, F. M. Shay, J. A. Lesoine, San Francisco, and Dr. M. A. Pepoon, San Diego.

Publicity Committee

Dr. J. A. Lesoine, chairman; Drs. Crutchett, S. R. Levy, Kanter.

Finance Committee

Dr. G. A. Gottstein, chairman; Drs. J. A. Lesoine, F. M. Shay, A.R. Watts.

Housing and Entertainment Committee

Dr. O. L. Gruggel, chairman; Drs. J. H. Morris, T. Thompson, S. R. Levy.

Scientific Committee

Dr. J. H. Morris, chairman; Drs. S. R. Levy, others to be appointed.

Reception Committee

Dr. S. Rutherford Levy, chairman, others to be appointed.

Ladies' Entertainment Committee

Dr. Helen Z. Crutchett, chairman, other members to be appointed.

BOOK REVIEWS

PRACTICAL MASSAGE AND CORRECTIVE EXERCISES

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STATE SOCIETY NEWS

CALIFORNIA

The Alumni Association of the California College of Chiropody will hold its meetings in the meeting quarters of the San Francisco County Medical Society in the Medical Building.

Dr. E. Z. Foster and Helen Z. Crutchett addressed meeting of the Y. W. C. A., February 7th and 8th, on the care of the human foot.

A benefit dance for the Clinics of the California College of Chiropody will take place March 19th; Dr. J. F. Gebhardt is chairman of the committee.

The Pedic Society of the State of California now controls the California College of Chiropody; it is hoped to make the College a non-profit earning corporation for the best interests of the College and the profession.

The following officers and directors of the California College of Chiropody were elected for the ensuing year: President, Dr. John A. Lesoine; Vice-President, John H. Morris; Secretary-Treasurer, Dr. S. Rutherford Levy. Directors: Drs. Scharff, Gruggel, Shay, Engel, Crutchett. Craw, Gebhardt, Watts.

A debate will be held at the meeting of the Alumni Association the last Thursday in February. "Resolved That arch supports are not only unnecessary, but harmful, when used in the treatment of arch lesions."

President Scharff of the Pedic Society of California will leave shortly for the northwest, and will likely visit the Pedic Societies of Oregon and Washington.

About a dozen chiropodists of San Francisco and Oakland have formed a class for the purpose of taking up a special course in electro-therapy under the supervision of Natalis Selling, M.D., Chief Clinician of the Stanford University Medical School in the department of electro-therapeutics.

All the convention committees are hard at work, planning programs for the big convention in August. From present indications there will be a very large attendance at the convention.

Make your reservations for rooms at the convention with Dr. S. Rutherford Levy, 12 Geary Street, San Francisco, California, Secretary Housing Committee. Single room at the Palace, Convention Headquarters, $5.00; for two persons, $8.00.

IOWA

The annual meeting of the Iowa State Podiatry Association was held January 24th, 1921, in the office of Dr. Wilkinson, in Des Moines. The meeting was well attended, and the society was very fortunate in having as a guest, Dr. W. V. Ramsburg, of Minneapolis, first vice-president of the N.A.C.

The scientific portion of the program was given over to J. F. Auner, M.D., eminent dermatologist. He oblingingly invited the society to meet in his laboratories, where he lectured on the use of radium and the X-Ray in treating skin diseases, epithelioma and goitre. He exhibited thousands of dollars worth of radium and explained the technic of its use, also that of the X-Ray and of the Alpine sun lamp. In all, this gentleman gave two hours of his time, and it was a rare opportunity that the members fully appreciated.

Dr. W. Gerard, of Cedar Rapids, who is devoting all his time to legislative work, reported to the society the progress of the chiropody bill now in the Legislature. The Legislative Committee, together with Dr. Ramsburg, spent most of the preceding day working on the bill and making plans for its passage. Dr. Ramsburg, who has had much experience in legislative matters, was of invaluable help. So much time was spent in the discussion of these matters, that several very vital and important features of the program had to be omitted.

The following officers were elected: President, R. U. Wilkinson; Vice-President, Josephine Schlunke; Secretary-Treasurer, S. J. Olson. Dr. Wilkinson was elected Delegate to the National Convention with Dr. Olson as alternate.

After the election of officers the members sojourned to Hotel Savery, where a fine dinner was enjoyed.

The meeting was called to order again at 8 P. M. in Dr. Schlunke's office. The evening was spent in the discussion of the various proposed amendments to the National Constitution and By-laws. Action was taken on each and the delegate was instructed to vote accordingly.

Next year more time will be alloted for our meeting and plans are already being made for an interesting and instructive program.

With three exceptions every eligible practitioner in the State belongs to the Association. Iowa needs chiropodists. There are a dozen cities of 25,000 inhabitants and over, that have not one single practitioner, nor can boast of one nearby. The profession is well introduced now and the opportunities are exceptional. The State Association will give full co-operation to anyone who may be interested in locating in Iowa. The bill that is now introduced to the legislature, and that will most probably be passed, is most liberal and will make a virtual "garden spot" for progressive and ethical practitioners.

KENTUCKY

The Kentucky Pedic Association held a regular meeting on Sunday, January 16, 1921, at 2:30 P. M. in the office of Dr. Uriah E. Litsey, Louisville.

There were 90 per cent of the members present, and two new members, Nettie Bruckert and Rosalie Malone, both of Louisville, and assistants to Dr. Frank Davis, were elected. This was the largest meeting since the organization of the society and thus everyone was quite encouraged with the progress we are making.

The next meeting will be held in Lexington on Sunday, April 10th. The Association extends an invitation to any of the neighboring states to meet with us on that day. This will not be a scientific meeting, but plans are already under way for the following meeting to be along scientific lines, and the same invitation is extended to our neighbors.

Most of the afternoon was occupied with new business. Election of officers for the ensuing year was held, and resulted as follows:- Presdient, L. R. Gordon; vice-president, S. D. Toth; secretary, Edna G. Evans; Treasurer, U. Z. Litsey.

The following committees were appointed: Doctors Litsey, Buckley and Froehling. Ethics Committee; Doctors Euller, Gordon and Bell, Censors, whose duty it is to detect and report all unethical or unscientific work; Doctors Robinson, Covington; Gordon, Lexington; and Litsey, Louisville.

The adjournment was followed by a very unique and interesting discussion of unusual cases. It is from these informal "get-to-gether" talks that the members derive so much benefit. It is surprising to realize how much our neighbors can give us if we but let them.

KINGS COUNTY DIVISION

Evidence of the increasing interest of chiropodists in the practical use of the high frequency electrical current, was apparent by the full attendance of members at the lecture given by Dr. A. M. Stafford on January 24th at the Kings County Division meeting rooms.

Apparatus for demonstration purposes was supplied by the Wappler Company of New York.

The feature which perhaps aroused most interest, was the demonstration of the destruction of verruca by diathermy.

To illustrate his method, Dr. Stafford used a piece of steak. One side was applied a piece of zinc sheeting, several inches in diameter with wire connection, to the opposing side Dr. Stafford applied a cautery point for three seconds. The powerful current being concentrated in sufficient strength at the point where the cautery point was applied to reduce the flesh in the immediate area to a mush, soft enough to be scooped out.

In professional use, Dr. Stafford, states that the local area is anaesthetized before cauterization and reports that healing is generally rapid after a single treatment.

Two new members were elected, Dr. Peet and Dr. Underhill, both graduates of the past year and established in residential sections of Brooklyn.

Dr. John Long tendered his resgnation as a member.

The Brooklyn Foot Clinic for the past four years established in the Brooklyn City Dispensary, 11 Tillary Street, will discontinue its operation on March 1st.

The Dispensary Board has decided that the space devoted to the Foot Clinic is needed for the work of their maternity center.

The present working staff of the Clinic are: Drs. N. A. Gottlieb, M. Arnemann, H. Brown, J. Burgio and M. Underhill.

No immediate relocation is planned but a move is being made to secure a permanent home for a clinic and meeting room.

There would probably be comparatively little difficulty in securing from some charitable agency, the use of some space for clinic purposes, but it has been decided to have an independent institution, controlled entirely by chiropodial interests.

MASSACHUSETTS

At the January meeting of the Massachusetts Chiropody Association the following resolutions were unanimously passed:

Whereas. The Massachusetts Chiropody Association has for some time favored the ownership of the official publication of the National Association of Chiropodists by the latter organization,

Be It Resolved, That the Massachusetts Chiropody Association most heartily commends the action of the Council of the National Association of Chiropodists in arranging for the purchase of "Pedic Items" to be hereafter known as the "Journal of the National Association of Chiropodists," and

Be It Further, Resolved: That a copy of these resolutions by spread upon the records of the Massachusetts Chiropody Association and that copies be sent to the president and secretary of the National Association of Chiropodists and to the editor of The Jounal.

MONROE DIVISION

The monthly meeting of the Monroe County Division Pedic Society, State of New York was held Monday evening, February 7th in its meeting room, 89 Main Street. East. In spite of the fact that it had been announced that an interesting program was to be given, the attendance was small.

Dr. J. D. Stone acted as secretary in the absence of Dr. Mann. A letter from the N. A. C. was read advising anyone planning on going to the San Francisco Convention to make their reservation on the "Special" before March 1st.

As the official business to be considered was light, the greater part of the evening was devoted to the third lecture on "Osteology" delivered by Dr. J. D. Stone. The reading of a paper on "Pus," which Dr. Becker intended giving, was postponed until the March meeting.

NEW YORK COUNTY DIVISION

The regular monthly meeting of the New York County Division, Pedic Society of the State of New York, was held in its meeting rooms, Terrace Garden, on the evening of Tuesday, February 8th, 1921.

Chairman Redell called the members to order at 8:45 and the minutes of the previous meeting and of the meeting of the Executive Board were read and approved. The Membership Committee, Charles Schifter, chairman, reported the names of Benjamin Siegel, Paul Schwartz and George Sommers as being recommended for membership in the society. These candidates were balloted for and elected. The committee further announced that it had several other applications which as yet had not been investigated These will be acted upon at some future meeting.

The lecturer of the evening was introduced. Dr. Joseph Mark, M.D., Professor of Physiology, at the First Institute of Podiatry, spoke on "Diabetes and Its Foot Manifestations." This proved to be one of the most interesting lectures heard at the Division this season and Dr. Mark was heartily applauded upon the completion of his remarks.

Dr. Mark went thoroughly into the subject of diabetes and called attention to the changes causing the excess of sugar in the blood and urine. He outlined a diet for sufferers with the disease and enumerated the diagnostic points from the chiropodist's viewpoint as well as that of the physician. His talk included instructions for the examination of urine at home and several other helpful suggestions for the patient to be guided by and to carry out.

The meeting adjourned to meet on the second Tuesday in March.

OKLAHOMA

The semi-annual meeting of the Oklahoma Podiatry Association was held at Oklahoma City on January 4th. The following were voted on and admitted to membership: O. W. Wilke, L. V. Shelton, Tulsa; Harry G. West, Okmulgee; Mrs. Lansing, Nowata; A. B. Crawford, Bartlesville; Mrs. Fern G. Chadwick. Oklahoma City. The matter of a bill to be presented to the incoming legislature was also given consideration.

There are still some good openings in small cities in this State for some live wires. If you will address Dr. Chadwick, he will be glad to assist you.

Dr. E. C. Badger has returned to Tulsa and will be associated with Dr. O. W. Wilke in the Roberts Building, January 1st. Dr. R. V. Morris is now located in his new office at 104½ West Main Street, having severed his connection with the shoe store where he was formerly associated.

Dr. W. M. Chadwick, chairman Seventh N. A. C. Membership Zone, made a trip to Nebraska last month, calling on the doctors of Omaha so far as he

could. Owing to poor train service his time was limited.

Dr. J. E. MacGregor, president of the local association, has tendered his offices and commodious reception rooms for the use of the O. P. A. at this meeting.

Dr. W. M. Chadwick has been appointed a member of the public health committee of Oklahoma City which means clean up. You are up against it if you do not.

We are proud of the fact that we do not know of one member of our association who now displays an unethical "ad" in his office window, door, or card. Advertisers are a thing of the past. What did this? Not talk, but good work boosts, not knocks. You are sure to succeed if you will only be ethical and here is one instance where it pays to not advertise.

PENNSYLVANIA

Practically the whole time for the meeting of the Chiropody Society of Pennsylvania this month was given up to just having a good time. A very short time early in the evening was occupied by routine business, which was followed by a short talk on "Osteology" by Dr. E. Rosenbaum, Class of 1920, Chiropody School of Temple University. Then, all formalities over, everyone enjoyed an excellent buffet lunch served by the Stewards' Entertainment, and Ways and Means Committees. B. P. Grist and A. R. Keirsey, chairmen, arranged for dancing, to which the balance of the evening was devoted.

Members reached the tables where the lunch was served by means of a "snake dance" led by students of the ciropody class.

Announcement is made that the preliminary requirements for the Chiropody Course at Temple University will be raised to two years' of high school work in 1922, and three years' of high school work in 1923. This much-needed improvement was brought about by the efforts of the Chiropody Alumni of Temple University.

WASHINGTON

A local society has been organized for the purpose of study work among the chiropodists of Spokane. E. E. Weholt is president; Mabel Burns, vice-president; Minna Horton, secretary, and the Trustees are J. A. Morse, M. Burns and E. Erickson.

CURRENT LITERATURE

THE PRINCIPLES OF CONGENITAL TALIPES EQUINO-VARUS

R. C. Elmslie, M.D., F.R.C.S.

The Jour. of Orthop. Surg.

After a detailed description of the pathological anatomy of the infant and the more resistant club feet, the author gives his methods of correction of this foot deformity.

The congenital, non-relapse cases are corrected by simple manipulations under general anæsthesia. This procedure is repeated, if necessary two, three or four times. The foot is retained in plaster of Paris between the manipulations. No tenotomies are performed in most of the cases. The first treatment is begun at the age of one month, unless the child is feeble and undersized, when the treatment is delayed until the child is able to stand the anæsthetic.

After each forcible correction, the foot must be fixed in a position which can be maintained without pressure. This is done to avoid constriction of the foot. One of the most difficult points in the treatment is to secure external rotation, which is due, according to the author, to imperfect stretching of the astragalo-scaphoid capsule, resulting in failure to replace the scaphoid, os calcis and cuboid in their proper positions. To avoid this inversion, the foot is always fixed in the plaster in an everted position, with the knee flexed.

The author's method of treatment may be summarized in: 1. The sole is flattened, the plantar fascia and astragalo-scaphoid capsule are thoroughly stretched. The foot immobilized in a corrected position for four to six weeks. 2. With the foot in abducted position, it is dorsiflexed steadily and strongly, stretching the tendo Achilles. Immobilization in corrected everted and dorsiflexed position.

The relapsed cases: Relapses occur after every method of correction. It is due to either imperfect correction or inadequate after treatment. Most

often it happens because of failure to correct the varus part in the first stage of treatment.

Elmslies' treatment is: first correction of the deformity by manipulation and, second, upon operation to remove the obstruction to a complete correction of of the varus. The obstructions are: 1. The astragalo-scaphoid capsule, the internal lateral ligament and the attachment of the tibials posticus muscle. 2. The displacement inward of the cuboid upon the calcaneus, and, 3. the inward and outward obliquity of the neck of the astragalus and the anterior part of the os calcis. A description of the operation follows in the original article.

A. GOTTLIEB, M.D., San Francisco.

MALIGNANT ADENOPATHY OF BONES OF FOOT PROBABLY OF THYROID GLAND ORIGIN

Herbert R. Brown, M.D.

Jour. A.M.A., Dec. 25, 1920, pages 1780-1781.

Reviewing the literature of these and similar cases, the author reports a very extraordinary case of a malignant and rapidly growing adenoma of the foot and leg.

In view of the importance and rarity of this case, the history may be briefly here stated:

History: A woman, aged 40, complains of throbbing pain in the leg, and great toe when extended. Feels "run down." Born in the U. S. A.; grown up in good environment. Had the common diseases of childhood. Had one child at 35; no miscarriages. Slight dismenorrhea always present. In 1911 had thyroid gland removed which contained a tumor. Well till 1916.

In 1916 began to complain of throbbing, dull pain in the toes of the right foot, of tired feeling and lumbago. Worn tight-fitting and pinching shoes. X-Ray shows distinct loss of bone substance in the toes. Four toes were amputated.

In 1917 the dorsum of foot and ankle became swollen. The tumor mass was soft and painless. X-Ray showed marked loss of bone substance in the fibula and the fifth metatarsal bone. Slight secondary anemia. Blood negative to culture, Wassermann, sugar, urea. Urine normal. General physical examination and roentgenograms negative.

Clinical diagnosis at this time: Bone tumor of probable thyroid origin was made. Treatment: The great toe was amputated and the section showed a malignant and rapid growing adenoma. Hystologically it was impossible to state definitely, but in view of the history it was concluded, that the tumor is of thyroid gland origin.

Later on the leg of the patient was amputated above the tumor mass. Hystologically it was found that the tumor contained typical adenomatous arrangement of cuboidal epithelium, containing chromatic nuclei. This latter finding is common in cases of exophthalmic goiter. The patient has remained in good health at the end of one year following the second operation.

A. GOTTLIEB, M.D., San Francisco.

INJURIES TO THE ANKLE AND THEIR TREATMENT

Morris B. Cooperman, M.D.

Medical Record, Jan. 1, 1920 Vol. 99, No. 1. Pages 1 to 6.

The articles deals with acute and chronic sprain of the ankle joint and advocated a treatment which would result in better function and earlier recovery.

For the acute sprains the author advises to follow the following rules: 1. Relax the torn or stretched soft tissues by reversing the movement followed by the traumatizing force, and immobilize the joint in this position. 2. Maintain this position of the ankle until healing of the soft structures has been completed. 3. Improve the circulation of the injured part by the use of superheated air, massage and mild, passive exercises. 4. Early functional use, allowance being made that no strain be put upon the newly formed fibrous tissue.

Coopermann immobilizes in a modified adhesive plaster bandaging and allows the patient to walk with the foot in the forced corrected position. The correction is augmented by means of a wedge inserted into the heel and sole of the shoe on the side of the torn structures.

The chronic sprains are by means of massage and contrast baths so as to encourage a freer flow of blood to and through the injured area. Only in condition of deformity which have resulted from sprain, the author advocates manipulation tenotomy and breaking up of adhesions under an anesthetic. Three weeks the corrected foot is held in plaster of Paris cast and then baked and manipulated to regain function.

A. GOTTLIEB, M.D., San Francisco.

THE QUIZ COLUMN

The Answers to the Following Questions Are Taken From Young's Hand-Book of Anatomy

1. What is human anatomy and how is it divided?

Human anatomy is the science which treats of the apparent properties, organization and form of man in a physical or healthy state. It is divided into general anatomy, descriptive or special anatomy, and surgical anatomy.

2. What does general anatomy include?

General anatomy treats of the minute structure or physical elements of the organs of the body. It is also called microscopical anatomy or histology. It comprises four distinct elementary tissues: Epithelial, including mucous membrane, epedermia, glands, etc. Muscular, including striated and non-striated muscles. Connective, including white fibrous, elastic, adipose, cartilage and bone. Nervous, including the proper nerve elements.

3. What does descriptive anatomy embrace?

Descriptive or special anatomy treats of the various properties of the organs arranged into systems, hence the name systematic. It includes: Osteology, the anatomy of the bones. Syndesmology, the anatomy fo the joints. Myology, the anatomy of the vessels. Neurology, the anatomy of the nerves. Splanchnology, the anatomy of the viscera, etc., etc.

4. Of what does surgical anatomy treat?

Surgical or topographical anatomy treats of the relative position of organs to one another and to the surrounding parts in special regions of the body, as the axilla, neck, or groin.

5. What is the skeleton of the body?

The bones comprising the framework of the body. This in the adult consists of 206 bones, including the ossicula auditus: Excluding the ear ossicles, the number is 200, or excluding also the two patellas and the hyoid bone the number is 197. Spine (including coccyx and sacrum) 26, cranium 8, face 14, ribs sternum, and os hyoiduem 26, upper extremity 64, lower extremity 62, ear ossicles 6.

6. Define the eminences and depressions by which the surface of the bones are marked?

An apophysis is a prominent excrescence formed directly upon a bone, and is distinguished from an epiphysis, which has been formed from a distinct center and separated by cartilage, but afterward united to the bone. A head is a rounded, smooth, articular eminence for articulation. A condyle is an irregular prominence for muscular attachment. A trochanter is a large prominence for the attachment of rotator muscles. A tuberosity is a broad, uneven eminence. A tubercle is a small tuberosity. A spine is a sharp-pointed eminence. A line, or ridge, is a rough, narrow elevation, extending some distance.

7. How are the cavities of bones divided?

The cavities of the bones are divided into the articular and the non-articular. The articular are named acetabulum, measure like; glenoid, hollow; cotyloid, cuplike; facet, smooth; trachlear, pulley-like; aveolar, socket-like. The non-articular cavities are named notches, fissures, grooves, furrows, fossae, hiatus, foramina, canals, sinuses, aqueducts, cells, depressions, meatuses, etc.

8. What is the structure of bone?

In structure they consist of an ivory-like compact substance (substantia compacta) inclosing a lamellar, rectic-ular cancellous substance; also designated loose or spongy bone (substabtia spongiosa). They are covered with periosteum and their cavities are lined with endosteum and filled with medulla and marrow.

9. What is periosteum?

Periosteum is a fibrovascular membrane, composed of two layers, the outer formed chiefly of connective tissue, the inner composed of several layers of elastic fibers, the deepest of which is the "osteogenic" or bone producing layer. The tendons and ligaments are attached to the periosteum by a mutual interlacement of the fibers.

10. What is the endosteum?

Endosteum, medullary membrane or internal periosteum, is a delicate, highly vascular membrane lining the cylindrical cavity of long bones.

11. Describe the medullary substance.

Medulla, or bone marrow, is of two kinds, the red in the flat and irregular

bones, and the yellow in the shafts of adult long bones. The red marrow (medulla ossium rubra) has few blood vessels, but many corpuscular elements. These may be divided into three groups: (1) red, nucleated, true "marrow cells," or myelocytes; (2) large, pinkish cells, "myeloplaques" of Robin, supposed to be the source of the red blood-corpuscles or erythroblasts; and (3) giant cells or "osteoclasts." The yellow marrow (medulla ossium flavo) or myeloctyes contains numerous blood-vessels, a few "marrow cells," and a large quantity of fat, which imparts to it its color.

12. How are the bones supplied with blood?

The arteries consist of three sets: The arteries of the (1) compact and (2) cancellous tissue are derived chiefly from the periosteum, the latter being larger and less numerous. The medullary canal of long bones has (3) one or more nutrient arteries, which penetrate the compact tissue obliquely and divide into two branches, one passing upward, and the other downward, in the canal. All the arteries anastomose freely with each other.

13. What is the arrangement of the venous system in bones?

The veins consist of three sets also: 1. The veins of the compact substance are small and join the periosteum. 2. The veins of the cancellous tissue do not accompany the arteries, but in certain localities form large, tortuous channels, as in the diploic veins of the cranium. In the long bones they emerge at the end near the articular surfaces. 3. The nutrient arteries are accompanied by one or more large veins, which emerge at the nutrient foramen.

14. Are lymphatics and nerves found in bones?

Lymphatics and nerves are numerous in the periosteum and are also found in the substance of the bone.

15. What are the division of the bones of the foot?

The tarsus, seven bones, the metatarsus, five bones, and fourteen phalanges.

16. Name the tarsal bones.

The tarsal bones (ossa tarsi) are: calcaneum, astragalus, cuboid, scaphoid, and internal, middle and external cuneiform. They may be arranged into two series, anterior and posterior; the os calcis and astragalus behind, and all the others in front of the calcaneocuboid and astragaloscaphoid joints (Chopart's).

17. Describe the os calcis.

Calcaneum, or os calcis, the largest, is irregularly cuboidal. The superior surface presents two articular surfaces for the astragalus, separated by a groove for the calcaneoastragaloid ligament, and internally a projecting process, the sustentaculum tali, for calcaneocuboid ligament. The inferior surface, rough and excavated, presents two tubercles, an outer and inner tubercle, for muscles and ligaments. Internal surface is concave, for passage of flexor longus and tibialis posticus tendons, and plantar vessels and nerves. External surface presents tubercle (processus trochlearis) for external lateral ligament of ankle and grooves for peroneal tendons. Posterior surface, projecting behind (tuber calcanei) presents a smooth surface above for bursa and rough below for attachment of tendo Achillis. It articulates with astragalus and cuboid. Muscular attachments are eight: tendo Achillis, plantaris, tibialis posticus, abductor hallucis, abductor minimi digiti, flexor brevis digitorum, accessorius and extensor digitorum.

18. Describe the astragalus.

Astragalus (tales) is an irregular, short bone, consisting of body (corpus tali) neck (collum tali), and head (caput tali). The quadrilateral body presents four articular surfaces, above for lower extremity of tibia and internal malleolus and external malleolus; below, two surfaces for os calcis, separated by deep groove for interosseous calcaneoastragaloid ligament; posteriorly it presents a deep groove (sulcu sm. flexor hallucis longi) for flexor longus hallucis tendon; and, anteriorly, the rounded convex head supported on neck articulates with scaphoid, and rests upon calcaneoscaphoid ligament. It articulates with four bones: tibia, fibula, scaphoid and os calcis. It has no muscular attachments.

19. Describe the cuboid.

Cuboid (os cuboideum-cub-like) is a small, pyramidal bone, between the os calcis and the fourth and fifth metatarsal bones on the outer side of the foot. The upper or dorsal surface is rough for ligamentous attachment; the lower or plantar surface is grooved (sulcus m. peronoei longi) for tendon of peroneus longus, behind which is a ridge for the long calcaneocuboid ligament, terminating externally in the tuberosity of the cuboid tuberositas ossis cuboidei). The external surface has a deep notch, the outer extremity of the peroneal groove. The posterior

surface has triangular facet for os calcis, the anterior has two facets, separated by a ridge for the fourth and fifth metatarsal, and the internal surface has broad, square facet for external cuneiform, and sometimes a smaller facet for scaphoid. It articulates with four and occasionally with five bones. It has one muscular attachment—part of flexor brevis policis.

20. Describe the scaphoid.

Scaphoid, or navicular bone (os naviculare pedis) is a boat-like bone place between astragalus and three cuneiform bones. Its posterior concave surface articulates with head of astragalus, its anterior convex surface has three facets for cuneiform bones; its internal border presents the tuberosity of the scaphoid (tuberositas ossis navicularis) for insertion of tibialis posticus, the only muscular attachment. Its other borders are roughened for ligamentous attachments. It articulates with four bones: astragalus and three cuneiforms. The cuneiform bones are named from their position, the internal, middle and external.

21. Describe the internal cuneiform.

The internal cuneiform (os cuneiforme premium), the largest, has its base below and articulates anteriorly with first metatarsal, posteriorly with scaphoid and externally with second metatarsal and middle cuneiform. The plantar surface presents tuberosity for insertion of part tibialis posticus and anticus tendons, the only muscular attachments. It articulates with four bones: scaphoid, middle cuneiform, first and second metatarsal.

22. Describe the middle cuneiform.

The middle cuneiform (os cuneiforme secundum), the smallest, has its base upward, and articulates posteriorly with scaphoid, anteriorly by a triangular facet with second metatarsal, and laterally with internal and external cuneiform. It has no muscles attached.

23. Describe the external cuneiform.

The external cuneiform (os cuneiforme tertium), intermediate in size, and more regular, articulates posteriorly with scaphoid, anteriorly with third metatarsal, internally with middle cuneiform and second metatarsal, and externally with cuboid and fourth metatarsal. Muscular attachments are for flexor brevis pollicis and tibialis posticus.

24. Describe the metatarsal bones.

The metatarsal bones (ossa metatarsalia) have the same general form as the metacarpal bones of hand, each consisting of shaft, head and base. The shaft (corpus) is prismoid and curved, with concavity below, convexity above. The head (capitulum) is rounded for articulation with phalanges, and has tubercles laterally for ligaments and a groove below for tendon of long flexor. The base (basis) is wedge-shaped for articulation with the tarsus and with each other. The first (os metatarsale I) and strongest articulates at base with internal cuneiform, at head with phalanx and second metatarsal, and has three muscular attachments: for tibialis anticus, peroneous longus and first dorsal interosseous. The second (os metatarsale II) is wedged in by base between three cuneiform bones, articulates with second phalanx, first and third metatarsi, and has three muscular attachments: for abductor, hallucis, first and second interosseous. The third (os metatarsale III) articulates with external cuneiform below and second and fourth metatarsi and third phalanx, and has four muscular attachments: for abductor hallucis, first plantar, and second and third dorsal interossei. The fourth (os metatarsale IV) articulates at base at external cuneiform and cuboid and at extremity with third and fifth metatarsal and fourth phalanx, and has four muscular attachments: for abductor hallucis, third and fourth dorsal, and second plantar interossei. The fifth (os metatarsale V) has marked tubercle on outer side. It articulates with cuboid, fourth metatarsal, and fifth phalanx, and has five muscular attachments: for flexor brevis minimi digiti, peroneous brevis and tertius, fourth dorsal, and third plantar interrossei.

25. Describe the phalanges.

The phalanges of the foot (phalanges digitorum pedis) have same general characteristics as in hand, but are compressed from side to side instead of from before backward, and have the following nomenclature applied: first or proximal phalanx (phalanx prima), second phalanx (phalanx secunda), ungual or distal phalanx (phalanx tertia). The muscular insertions to first row are: to great toe, transversus pedis, extensor brevis digitorum, abductor and flexor brevis hallucis; to second, first and second dorsal interrosseus; to third, third dorsal and first plantar interroseus; to fourth, fourth dorsal and second plantar interrosseus; to fifth, abductor and flexor and brevis minimi digiti and third plantar interrosseus. To second row: to great toe, flexor and extensor longus hallucis; to

remaining toes, extensor longus and brevis digitorum, flexor brevis digitorum and lumbricales. To third row, or ungual phalanges: flexor longus and extensor longus and brevis digitorum.

26. What are sesamoid bones?

Sesamoid bones (ossa sesamoidea) are small, osseous masses, cartilaginous in early life, developed in the tendons to relieve pressure. They are of two kinds—those over articular surfaces of joints, as patella; and those applied to the surfaces of bones, as in tendon of peroneous longus in the grooves of cuboid bones.

27. What bones comprise the lower leg?

The tibia and the fibula.

28. Describe the tibia.

The tibia, or shin bone, extends on the internal aspect of the leg from knee to ankle, and consists of a shaft upper and lower extremity The shaft (corpus tibioe) is triangular, prismoid, with the base above. Its anterior border and internal surface are subcutaneous, the former forming the shin or crest of the tibia (crista anterior). The posterior surface (facies posterior) presents above an oblique line (linae poplitae) for the lower border of the popliteal muscle and facia, and origin of the soleus, and parts of flexor longus digitorum and tibialis posticus muscles. It presents just below the oblique line a nutrient canal (foramen nutricium), the largest in the skeleton, directed downward. Its external border, or interrosseous ridge (crista interrossea) is thin, for attachment of interosseous membrane. The external surface and internal borders are covered by muscles. The superior expanded surface presents: Head, consisting of two tuberosities, internal and external (condylus medialis and condylus lateralis), each having upon their surface a smooth concave ovoidal articulating facet (facies articularis superior) for the condyles of the femur, separated by the spinous process (eminentia intercondyloidea) of the tibia, in front and behind which is impression for crucial ligaments, and laterally tubercles for the extremities of the semilunar cartilages: Tubercle (tuberositas tibice), on the anterior surface of the head, between the tuberosities, for the insertion of ligamentum patellae; popliteal notch (incisura poplitea), separating the tuberosities, posteriorly, for attachment of the posterior crucial ligament; transverse groove, on the posterior surface of the inner tuberosity, for insertion of semimembranosus tendon; facet (facies articularia fibularia), upon the posterior surface of the outer tuberosity, for articulation of the head of the fibula. The inferior extremity, smaller than the superior, is quadrilateral, and presents in front a smooth surface for extensor tendons; behind a groove for flexor longus pollicis tendon; externally, a rough, triangular, articular surface, for fibula, and internally. The internal malleolus (malleolus medialis), which projects downward, and articulates by its outer surface with the astragalus. Its inner surface is smooth and subcutaneous; its posterior border is grooved (sulcus malleolaris), for the tendons of the tibialis posticus and flexor longus digitorum muscles, and to its tip is attached the internal lateral ligament. It articulates with three bones: femur, fibula and astragalus. Its muscular attachments are twelve—ligamentum patellae, popliteus, soleus, flexor longus digitorum, tibialis posticus, semimembranosus and tendinosus, gracilis, sartorius, tibialis anticus, extensor longus digitorum and biceps. It is developed from three ossific centers, one each for shaft, upper and lower extremities.

29. Describe the fibula.

The fibula, peroneal, or calf-bone, is a long slender bone on the outer aspect of the leg, and consists of a shaft, upper and lower extremities. The shaft (corpus fibulae), is prismoidal, four-sided, twisted on itself, and arched backward. Its antero-internal border, or interosseous ridge (orista interossea) gives attachment to the interosseous membrane. The postero-internal border (orista medialis), called also oblique line, and other surface and borders give attachment to all the muscles except the biceps. Nutrient foramen, about the middle of the anterior-internal surface, is directed downward. The superior extremity presents a neck, supporting a rounded, irregular head (capitulum fibulae), which articulates by a flattened facet on its inner surface with the tibia and is prolonged upward on its outer side by the styloid process (apex capituli fibulae), giving attachment to the biceps tendon and the external lateral ligament of the knee. The inferior extremity expands into the external malleolus (malleolus lateralis), with its convex internal surface for articulation with astragalus, outer convex surface subcutaneous, and posterior border deeply grooved (sulcus malleolaris) for ten-

(Concluded on page 36)

THE FORUM

INTERESTING SKIN CONDITION

Editor, J. N. A. C.:—

I have at present under my care a patient middle aged man, who has a curious condition of tissue between the toes, the appearance of the whole inner aspect of the adjacent toes is pearly white, the underlying tissues red and would bleed if this white "skin" is forcibly removed. The feet do not perspire, the sole of the foot harsh and dry. I have advised air and sunshine to the exposed foot, but my order is impossible to carry out. This is the third case I have seen, all in men, and I have been unable to relieve any of them to any extent. I divided antiseptic wash, creolin gtt in 2 ounces of water and paint with ichthyol, 25% with gauze between the toes. I confess I cannot name or describe the condition. Can your paper help me out by an article on skin condition, between the toes, I would be greatly obliged.

Very truly yours,
C. E. SMITH.

The data given in Dr. Smith's letter is hardly sufficient to enable one to make a positive diagnosis. However, it may be safe to assume that the disease affects both feet, that it is not specially itchy, that it is persistent, and that it does not yield to "antiseptic" treatment such as creolin solution and ichthyol (sulphur) ointment.

Nothing is stated as to the cutaneous condition elsewhere on the body. It would be desirable to know whether there is general dryness (any degree of ichthyosis). Has the patient any evidence on the knees, elbows or scalp of psoriasis? Is there a systemic gouty tendency? Are there any minute papules or vesicles on the dorsum of the toes? Has the condition persisted since childhood, perhaps to a lesser degree?

If all the above questions are answered in the negative it may be safe to assume that it is simply a case of hyperkeratosis, an increase in the formation of corneous cells with a decrease of the function of the sweat glands. Such conditions are generally attributed to a lack of balance of the internal secretions. They are usually corrected by the administration of thyroid extract internally.

In this case I would recommend that your correspondent prescribe internally, unless it is otherwise contraindicated, a 1 grain tablet of thyroid extract once daily. Locally a 5% salicylic ointment may be applied between the toes with benefit. This should be renewed daily after thoroughly wiping away with gauze any macerated corneous tissue. For the sole of the feet any fat, such as lanolin, olive oil, etc., may be rubbed in regularly with good effect.

ANDREW H. MONTGOMERY, M.D.

NEW YORK CLINICIANS FORM SOCIETY

The Clinical Society of the Foot Clinics of New York, is a little organization that was born at a dinner given to Otto F. Schuster by his clinical staff, sometime in November 1920, to celebrate his return after a prolonged absence due to an illness. At this gathering he was also presented with a pair of binoculars by his friends.

After the dinner Dr. M. J. Lewi, in his speech, commented upon the work done in both the general and orthopædics clinics of the Foot Clinics, but pointed out that lack of co-operation among the clinicians was a detriment to the clinic and to the advancement of the clinicians themselves. The clinicians present then decided to form a clinical society for the purpose of bringing about a greater unity and better co-operation. Monthly meetings are being held, in which interestiing cases are discussed and plans formulated to benefit the clinicians.

Those eligible for membership must be in active service in the capacity of either clinician or teacher in the Foot Clinics of New York or in the First Institute of Podiatry. Similar organizations exist in most hospitals and clinics and have done much for the education of the practitioner and for the clinics.

LOS ANGELES CLINIC

The following resolution was presented to the Los Angeles City Council and adopted:

Whereas, It has been brought to the attention of the City Council by Dr. Leck, State Chairman of the Committee on Clinics of the Pedic Society of the State of California, that the aforesaid Association is desirous of obtaining quarters from the City of Los Angeles for the purpose of establishing a free clinic; and

Whereas, It is a well-recognized fact that there is a very great need for work of this kind;

Now, Therefore, Be It Resolved by the City Council that the Health Commissioner, Dr. Powers, be instructed to designate what rooms are available in the Temple Block, or elsewhere, which could be used for purpose above set forth, and that Dr. Leck be notified as soon as possible so that the Association may proceed with the plans they have perfected.

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ANATOMY QUIZ

(Concluded)

dons of peroneus longus and brevis muscles. To the summit is attached the middle fasiculus of the external lateral ligament, and to rough depressions in front and behind the anterior and posterior fasciculi. It articulates with two bones, tibia and astragalus. Its muscular attachments are nine: Soleus, biceps three peronei, tibialis posticus, flexor longus hallucis, extensor longus digitorum and extensor longus hallucis. It is developed from three ossific centers, one each for shaft, head and malleolus.

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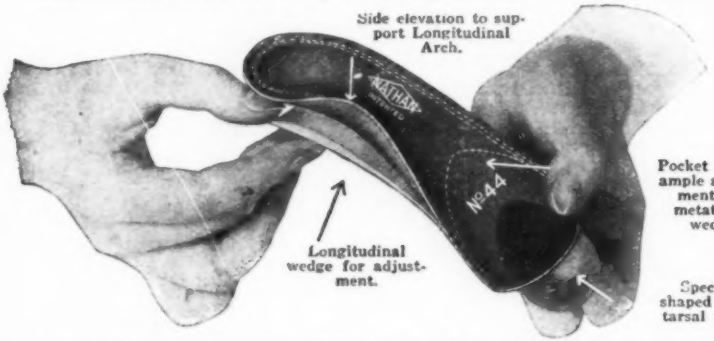
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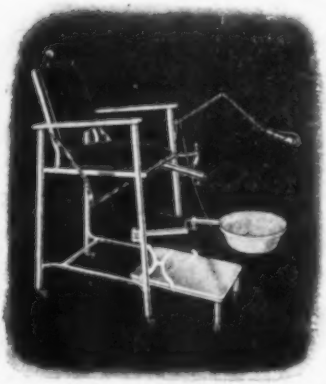

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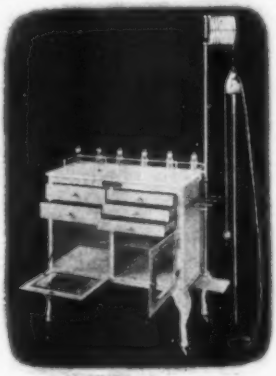

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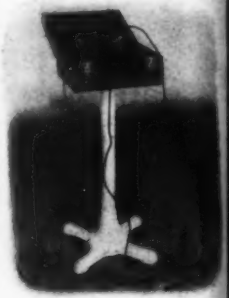

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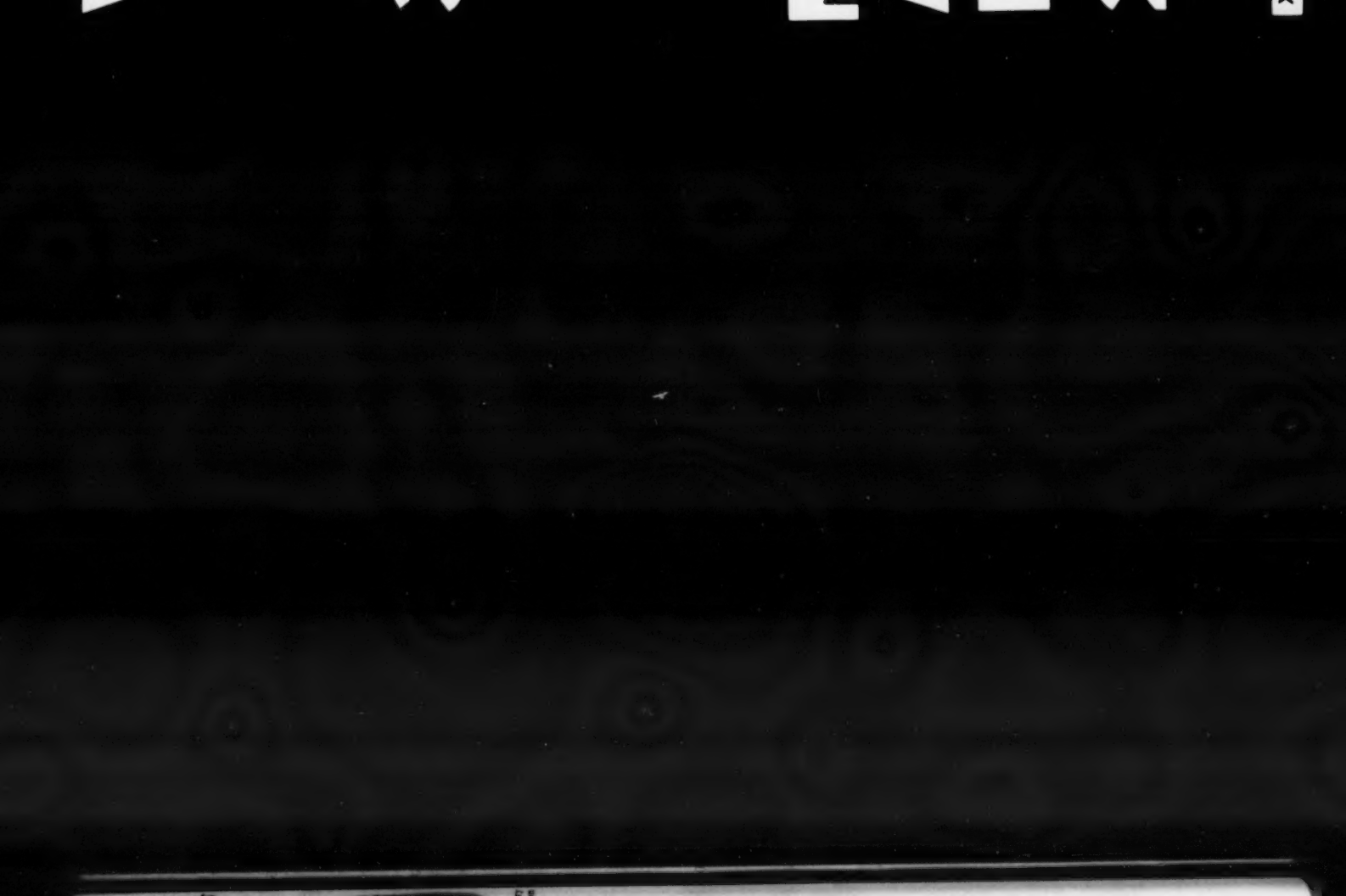
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